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QC

QC2- Inspect parts off machine FAI/FAIB

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Memo

Quality Control

Quality Control

QC8- Inspect parts - second check

Memo

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											DQA:	Da	ate:	
NCR: Y	es / N	o			WORK ORDER NON-C	O	NFORM	AANCE / UP	DATE					
											QA Closed:	Da	ate:	
Work Orde	r.				DISPOSITION				AGAINST [ÞΕ	PARTMENT	PROCESS		•
Part N	lo				Rework Scrap Use-as-is		Therm	Skid-tube Machining Moforming	Crosstube Small Fab Finishing			Water Jet d. Eng. Coor e/Packaging		Engineering Quality Other
NCR N	lo	· · · · · · · · · · · · · · · · · · ·			Work Order Update			Large Fab	Composite			Supplie	<u> </u>	
Root	D-1	. Chan	0	1	ption of work order update		nitial		tion		Sign & Date	Verification		QC Inspector
Cause	Da	e Step	Qty	-	or Non-conformance	Cn	ief Eng	Desc	cription		Date	vernicatio	<i>)</i> 111	QC inspector
Doc/Data	-													
Equip/Tooling		:												
Operator														
Material	\dashv	Ì						•						
Setup Other	_													
Process	_													
ŀ					_									
Supplier Training	-				*									
Unapproved	\dashv										·			
Unapproved		<u> </u>	1	<u> </u>	E/	<u> </u>	T CATE	GORY						<u>I</u>
Landir	ng Gear				General		. CALLE					<u>.</u>		
	Bend	ng		Г	Bend		Grain		Г		Ovalized			Pressure/Forced
	_	e Not Conce	entric to	o/s	BOM/Route	H	Hardwa	re			Over/Under	tolerance		Temperature/Cure
	Crack				Broken/Damaged	\vdash	1	ion Incomplete			Part Incorred			Weld
	—	ed/Crimped	1		Burrs		4 '	ions Incomplete/	/Unclear		Part Lost/Mi			Wrong Stock Pulled
	Cuffs	_ 2, 2,		<u> </u>	Contamination	H	Mainte	•	<u> </u>		Part Moved	J	_	,
	_	Treat		<u> </u>	Countersink	一	Mislabe		Ī		Positioned V	Vrong		
	_	ction Strip i	n Tube		Cut Too Short		Misread		-		Power Loss/	_	Г	Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Work Ordo <i>April-30-13 2:3</i>		1041		*101	1041*						Page 2
Item ID: Revision ID: Item Name:	D3469-3 Upper Plate			Accept	*N900	<u>04010</u>	N *	Setup	Start Stop	*NS	S1* S2*
Start Date: Required Date: Reference:	4/30/13 : 4/30/13	Start Qty: 6.00 Req'd Qty: 6.00	*6* *6*		Cust Item 1 Customer:	ID:					
Approvals:	Process Pla	n:				ate:	-	Run	Start Stop		₹1* ₹2*
Sequence ID/ Work Center II	D	Operation Description		Set Up/ Run Hours 0.00	Tool ID	Tool # Plan Code	Qty DAS	Reje Qty		Reject Number	Insp. Stamp
130 Small Fab		Small Fab Memo 1-Deburr if	necessary2-form outer flar	0.00 nge as per dwg D3469 usi		Throp	9489	·			19(01/2)
140			anges per dwg D3469 usir								
*140 *140* QC		QC5- Inspect part compl	eteness to step on W/O	0.00						_	
Quality Control											
*150		Identify as per dwg & St	ock Location:	0.00					·		
Packaging		Memo		0.00							

Packaging

NCR: Ye	es / No				WORK ORDER NON-C	CONFO	RMANCE / UP	DATE			•
					T	 			QA Closed:	Date	<u>:</u>
Work Ordei	ŕ:				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
					Rework		Skid-tube	Crosstube		Water Jet	Engineering
Part N	0.				Scrap	1	Machining	Small Fab	Pro	d. Eng. Coor.	Quality
	•				Use-as-is	The	rmoforming	Finishing	Rec/Sto	re/Packaging	Other
NCR N	0				Work Order Update		Large Fab	Composite]	Supplier	
Root		1			ption of work order update	Initial	1	ction	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief Er	g Desc	cription	Date	Verification	QC Inspector
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quip/Tooling									1		
perator											
Material	_										
etup	4										
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rocess											
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Inapproved		<u> </u>	<u> </u>			<u> </u>					
						AULT CA	EGORY				
Landin	g Gear				General	г		<u></u>	7	Г-	¬_
-	Bending			, <u> </u>	Bend	Graii		<u> </u>	Ovalized	-	Pressure/Forced
	Centre N	ot Conce	ntric to	O/S	BOM/Route	Hard		<u> </u>	Over/Under	⊢	Temperature/Cure
ļ	Cracks			<u> </u>	Broken/Damaged	—	ction Incomplete	<u> </u>	Part Incorre	ļ	Weld
-	Crushed	Crimped		<u> </u>	Burrs	\vdash	ictions Incomplete/	'Unclear	Part Lost/M	ssing _	Wrong Stock Pulled
	Cuffs			<u> </u>	Contamination	\vdash	itenance	<u> </u>	Part Moved		
].	Heat Tre			<u> </u>	Countersink	\vdash	beled	<u> </u>	Positioned V		¬
	_	on Strip in	Tube	_	Cut Too Short	Misre			Power Loss/	Surge	Other
	Ripples i			<u> </u>	Drill Holes	Offse					
1	⊣ `	Vaves in I		n	Drawing		of Calibration				
ļ	— 1	Sequence		<u> </u>	Finish		of Sequence				
	Wave/Tu	vist in Tul	be	l l	Folio	Outs	de Dimensions				•

DQA:

Date: _

Wave/Twist in Tube

Work Orde April-30-13 2:3		1041		*101	N41*				Page 3
Item ID: Revision ID: Item Name:	D3469-3 Upper Plate		· · · · · · · · · · · · · · · · · · ·	Accept	*N9000	40100*	Setu	up Start Stop	*NS1* *NS2*
Start Date: Required Date: Reference:	4/30/13 4/30/13	Start Qty: 6.00 Req'd Qty: 6.00	*6* *6*		Cust Item ID: Customer:				
Approvals:	Process Pla	an:	Date:	Tooling: SPC (Y/N):	Date:		Rur	Start Stop	*NR1* *NR2*
Sequence ID/ Work Center II	n	Operation Description		Set Up/	Tool ID T		-		Reject Insp.

0.00

0.00

QC21- Final Inspection - Work Order Release

Memo

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Quality Control

U 14.6123.

NCR: Ye	es / No				WORK ORDER NON-O	CON	IFORN	ANCE / UP	DATE			•
										QA Closed:	Date	:
Work Order	•				DISPOSITION				AGAINST DE	PARTMENT	·	
Part No	D				Rework Scrap		ī	Skid-tube Machining	Crosstube Small Fab	-1	Water Jet d. Eng. Coor.	Engineering Quality
NCR No	D				Use-as-is Work Order Update			noforming Large Fab	Finishing Composite	Rec/Sto	e/Packaging Supplier	Other
Root				Descri	ption of work order update	1	nitial	Act	ion	Sign &		
Cause	Date	Step	Qty	1	or Non-conformance	Ch	ief Eng	Descr	iption	Date	Verification	QC Inspector
oc/Data												
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Other											!	
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upplier												
raining												
Inapproved												
					F	AUL	T CATE	GORY				
Landing	g Gear				General					_		_
	Bending				Bend		Grain			Ovalized		Pressure/Forced
	Centre No	ot Concei	ntric to (o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
	Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorre	ct [Weld
	Crushed/	Crimped			Burrs		Instruct	ions Incomplete/U	Inclear	Part Lost/Mi	ssing	Wrong Stock Pulled
	Cuffs				Contamination		Mainte	nance		Part Moved		
	Heat Trea	et			Countersink		Mislabe	led		Positioned V	Vrong	
	Inspectio	n Strip in	Tube		Cut Too Short		Misread	i		Power Loss/	Surge	Other
	Ripples in	n Bend			Drill Holes		Offset		_	_		
	Torque W	Vaves in E	Extrusio	n	Drawing		Out of (Calibration				
Ī	Turning S	equence			Finish		Out of S	Sequence				
	Wave/Tw	vist in Tul	эе		Folio		Outside	Dimensions				

DQA:

Date:

April-30-13 2:38:51 PM

Work Order ID:

101041

Parent Item:

D3469-3

Parent Item Name:

Upper Plate

Start Date: 4/30/13

Required Date: 4/30/13

Start Qty: 6.00

Required Qty: 6.00

Comments:

IPP rev A 06.02.06 new issue EC

Component Item ID/	Replacement	Mfg/	Bin	Primary	Last	Route	Unit of	Qty on	Oty per Kit	Total	Qty	Date	Status	3
Item Name	Item ID	Purch	Item	Location	Location	Seq ID	Measure	-	Qty per itin	Qty	Issued	Issued	Status	
M304S26GA 304/316 0.018 SHEET		Purchased	No			100	sf	288.7400	0.2721	1.7185266 2-0		Jn	18-1-5	

<u>Location</u>	Loc Qty	Loc Code	
MAT020	288.74		
117798	69.28		
122753	97.06		122753
123135	122.4		

											D	QA:_	Da	ate:	
NCR: Y	⁄es	/ No				WORK ORDER NON-	CO	NFORI	MANCE / UPI	DATE					
			···								QA Clos	sed:	Da	ite:	
Work Orde	∍ŕ:					DISPOSITION				AGAINST DI	PARTM	ENT/	PROCESS		
	•					Rework	7		Skid-tube	Crosstube	7		Water Jet	: [Engineering
Part N	No.					Scrap	1	1	Machining	Small Fab	1	Prod	d. Eng. Coor.		Quality
	•			•		Use-as-is		Thern	noforming	Finishing] Rec/	Store	e/Packaging		Other
NCR N	No.					Work Order Update	_		Large Fab	Composite			Supplier		
Root					Descr	ription of work order update	T	Initial	Act	tion	Sign 8	&			
Cause		Date	Step	Qty		or Non-conformance	Cł	nief Eng	Descr	ription	Date	2	Verificatio	n	QC Inspector
Doc/Data															
Equip/Tooling					Ì							1			
Operator												Ì			
Material											Ì	-			
Setup												1			
Other					1										
Process					Į									,]
Supplier			1		l										
Training															
Unapproved		1													
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Landi	ng (Gear				General		_							-
		Bending				Bend		Grain			Ovalized	t			Pressure/Forced
		Centre N	ot Conce	ntric to	o/s	BOM/Route		Hardwa	ire		Over/Ur	nder t	tolerance		Temperature/Cure
		Cracks				Broken/Damaged		Inspect	ion Incomplete	Γ	Part Inc	orrect	t		Weld
		Crushed/	'Crimped			Burrs		Instruct	ions Incomplete/U	Jnclear	Part Los	t/Mis	ssing		Wrong Stock Pulled

Maintenance

Out of Calibration

Out of Sequence

Outside Dimensions

Mislabeled

Misread

Offset

Part Moved

Positioned Wrong

Power Loss/Surge

Other

Contamination

Countersink

Cut Too Short

Drill Holes

Drawing

Finish

Folio

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Cuffs

Heat Treat

Inspection Strip in Tube

Torque Waves in Extrusion

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

DART AEROSPACE LTD	Work Order:	101041
Description: Upper Plate	Part Number:	D3469-3
Inspection Dwg: D3469 Rev: A1		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

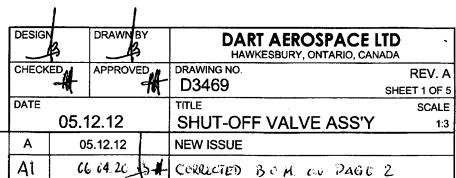
X First Article Prototype

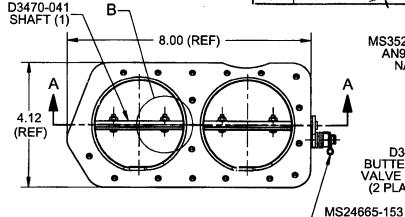
Drawing		Actual	Assent Baiset		Method of	
Dimension	Tolerance	Dimension	Accept	Reject	Inspection	Comments
8.25	+/-0.030	8.25"	_		V	Jkmoi
4.750	+/-0.010	4.750"	_		V	
Ø0.191	+0.005/-0.001	0.191"			ν	
4.165	+/-0.010	4.165"	-		ν	
2.390	+/-0.010	2.390"	_		V	
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Measured by:	Jm	Audited by:	27 , 9-89	Prototype Approval	: N/A
Date:	14-1-5	Date:	14/1/7	Date	: N/A

Rev	Date	Change		Revised by	Approved
Α	06.10.27	New Issue	14	(J/JLM SX)	

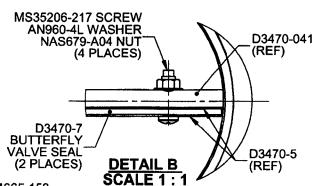


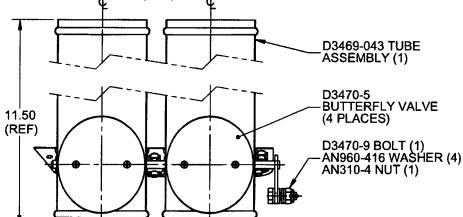


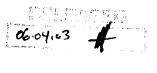


3.56 (REF)

SECTION A-A







101041

AN310-4 NUT (1)

D3469-041 SHUT-OFF VALVE ASS'Y

NOTES:

- 1) IDENTIFY WITH DART P/N D3469-041 USING FINE POINT PERMANENT INK MARKER
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018
- UNLESS OTHERWISE NOTED
 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.010

QTY -041	P/N	DESCRIPTION
Х	D3469-041	SHUT-OFF VALVE ASSEMBLY
1	D3469-043	TUBE ASSEMBLY
1	D3470-041	SHUT-OFF VALVE SHAFT
4	D3470-5	BUTTERFLY VALVE
2	D3470-7	BUTTERFLY VALVE SEAL
1	D3470-9	BOLT
1	AN310-4	NUT
4	AN960-4L	WASHER
4	AN960-416	WASHER
1	MS24665-153	COTTER PIN
4	MS35206-217	SCREW
4	NAS679-A04	NUT

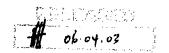
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COTTER PIN (1)

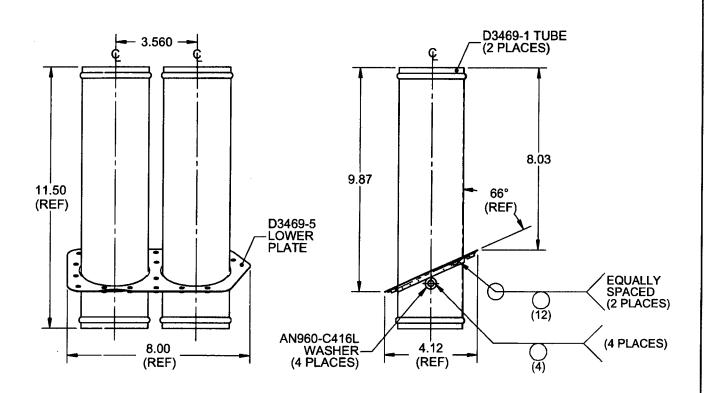
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1				
DESIGN DRAWN BY		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
CHECKED #/	APPROVED 11	DRAWING NO.	REV. A	
100	T	D3469	SHEET 2 OF 5	
DATE		TITLE	SCALE	
05.1	2.12	SHUT-OFF VALVE ASS'Y	1:4	



101041



D3469-043 TUBE ASSEMBLY

NOTES:

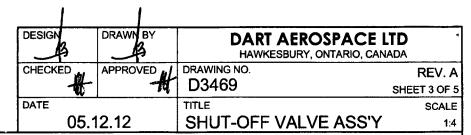
- 1) SPOT WELD PER DART QSI 004
- 2) FINISH: NONE
- 2) FINISH: NONE
 3) TOLERANCES ARE PER DART QSI 018 UNLESS
 OTHERWISE NOTED
 4) ALL DIMENSIONS ARE IN INCHES
 5) BREAK ALL SHARP EDGES 0.005 TC 0.010

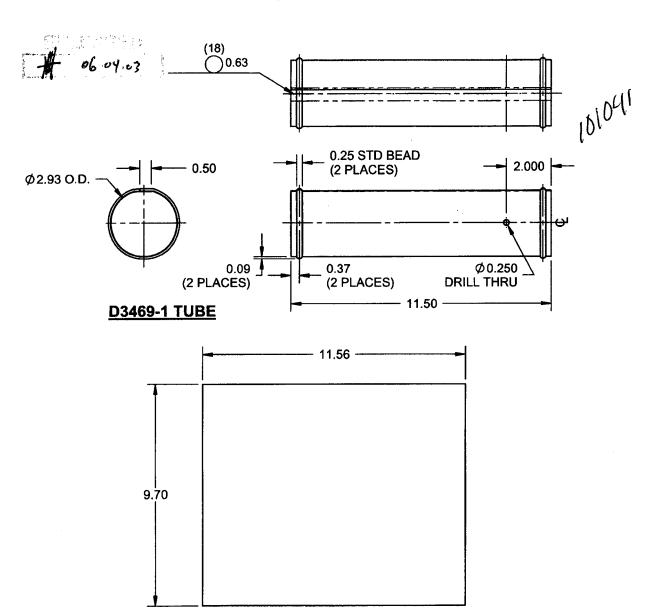
QTY -043	P/N	DESCRIPTION	
Х	D3469-043	TUBE ASSEMBLY	
2	D3469-1	TUBE	
1	D3469-5	LOWER PLATE	
-4-	D3470-5	PLATE VALVE A	
4	AN960-C416L	WASHER	

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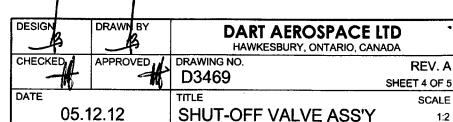
D3469-1F TUBE FLAT PATTERN

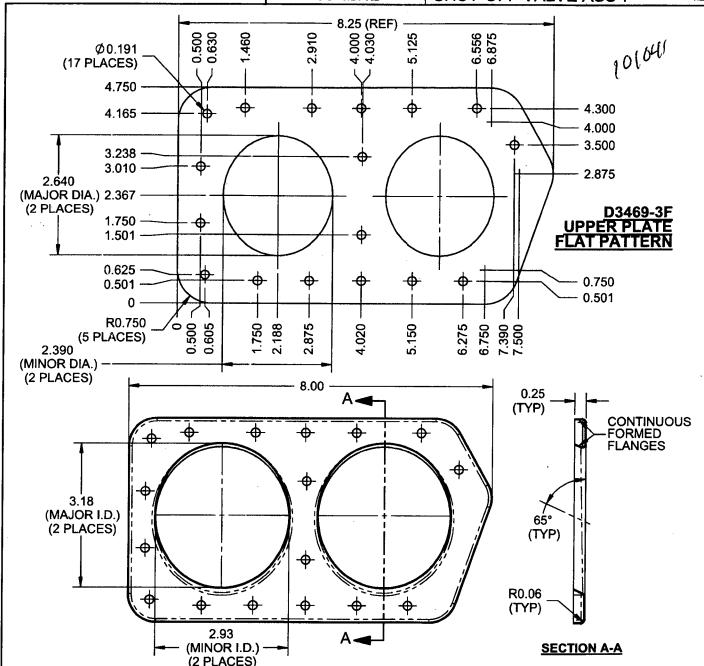
NOTES:

- 1) MATERIAL: AISI 304/316 SS SHEET PER MIL-S-5019 (ANNEALED) 2B FINISH 26 GAUGE SS (0.018 THICK) (REF. DART SPEC. M304S26GA)
 2) SPOT WELD PER DART QSI 004
 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED 4) ALL DIMENSIONS ARE IN INCHES 5) BREAK ALL SHARP EDGES 0.005 TO 0.010

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D3469-3 UPPER PLATE BENDING DETAIL

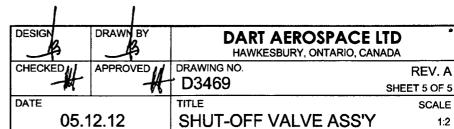
- 1) MATERIAL: AISI 3C4/316 SS SHEET PER MIL-S-5019 (ANNEALED) 2B FINISH 26 GAUGE SS (0.018 THICK) (REF. DART SPEC. M304S26GA) 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) FINISH: NONE
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.010

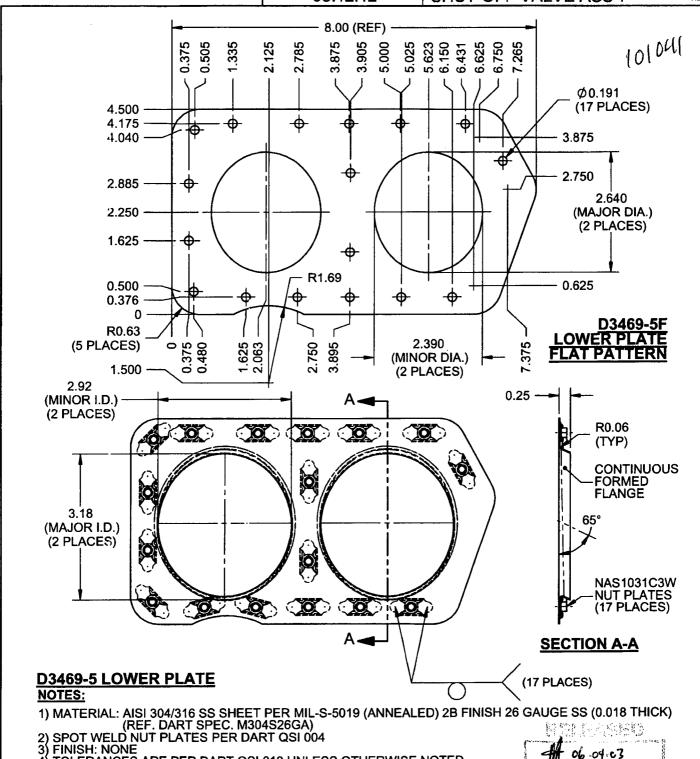
EFACUL 06-04-03

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06.04.03

- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- ALL DIMENSIONS ARE IN INCHES
- 6) BREAK ALL SHARP EDGES 0.005 TO 0.010